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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/963,774	09/26/2001	Jeffrey W. Nichols	EPH / 33	1743

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EXAMINER

THOMPSON, KENNETH L

ART UNIT	PAPER NUMBER
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3679

DATE MAILED: 03/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/963,774

Applicant(s)

NICHOLS, JEFFREY W.

Examiner

Kenn Thompson

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— The MAILING DATE of this communication appears on the cover sheet with the correspondence address —

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 December 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10-18 is/are allowed.
- 6) ☒ Claim(s) 1,3,4,6-9 and 19-29 is/are rejected.
- 7) ☒ Claim(s) 2 and 5 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "circumferential flange" of claim 9 must be shown or the feature canceled from the claims. No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3, 4, 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Andra, U.S. 5,024,120 in view of Pierce, U.S. 3,196,710.

Regarding claims 1 and 9, Andra discloses in figures 1-2 a torsional vibration damper for a rotatable shaft. Andra discloses an annular inertia ring (2). Andra discloses an elastomeric layer (3) disposed radially inward from the inertia ring. Andra discloses a polymer body (5) disposed radially inward from the elastomeric layer. Andra discloses an insert (1) disposed radially inward from the polymer body, the insert formed of a structurally rigid material and

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mountable to the rotatable shaft. Andra discloses the insert including a support flange (axially bent portion of 1 supporting elements 2-9), wherein an axial force applied to the front support flange is preferentially transferred to the insert such that the polymer body remains substantially stress-free. Andra does not disclose the flange projecting radially outward into the polymer body. Pierce teaches in figure 1 use of a flange (11) projecting radially outward into the polymer body (15) to allow for the weight of the inertia member to be transferred into the flange at a relatively low unit stress thereby avoiding premature shear failures (col. 1, lines 19-21). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the flange disclosed by Andra to project radially outward into the polymer body; as taught by Pierce to allow for the weight of the inertia member to be transferred into the flange at a relatively low unit stress thereby avoiding premature shear failures.

As to claim 3, Andra discloses the polymer body includes a first annular surface (7) and a second annular surface (9) opposite the first annular surface. Andra discloses the support flange having a seating surface (1 opposite 8) that is substantially coextensive with one of the first and the second surfaces of the polymer body.

As to claim 4, Andra discloses the seating surface is free of polymer material forming the polymer body.

As to claim 8, Andra discloses the structurally rigid material is metal (col. 3, lines 60-62).

Claims 6, 7 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Andra, U.S. 5,024,120 in view of Pierce, U.S. 3,196,710 as applied to claims 1, 3, 4, 8 and 9 above and in further view of Patterson, U.S. 5,112,282.

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As to claims 6 and 15, Andra discloses the polymer. Andra does not disclose the polymer is a glass reinforced polyamide. Patterson teaches use of a polymer that is a glass reinforced polyamide to improve tensile strength (col. 4, lines 28-51). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the polymer disclosed by Andra to be a glass reinforced polyamide as taught by Patterson to improve tensile strength. Applicant should note that it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

As to claim 7, Andra discloses the polymer. Andra does not disclose the polymer is mechanically stable at a temperature of at least about 230 degrees F. Patterson teaches use of a polymer that is mechanically stable at a temperature of at least about 230 degrees F to improve performance characteristics at high temperatures (col. 3, lines 41-45). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the polymer disclosed by Andra to be mechanically stable at a temperature of at least about 230 degrees F as taught by Patterson to improve performance characteristics at high temperatures. Applicant should note that it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Claims 19, 20 and 23, are rejected under 35 U.S.C. 103(a) as being unpatentable over Andra, U.S. 5,024,120 in view of Wells, U.S. 3,200,665.

Regarding claim 19, Andra discloses an annular inertia ring (20). Andra discloses an elastomeric layer (3) disposed radially inward from the inertia ring. Andra discloses a polymer

body (5) disposed radially inward from the elastomeric layer. Andra discloses an insert (1) positioned radially inward of the polymer body. Andra discloses the insert formed of a structurally rigid material and having a plurality of protrusions (crests of flange 1 at 8) providing torque locking structure that mechanically interlocks the polymer body with the insert so that the polymer body resist rotation relative to the insert (col. 2, lines 47-59). Andra does not disclose the protrusions extend radially into the polymer body. Wells teaches in figure 2 use of protrusions (14) that extend radially into the polymer body (15) to prevent rotational slippage (col. 2, lines 17-21). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the protrusions disclosed by Andra to extend radially into the polymer body; as taught by Wells to prevent rotational slippage.

As to claim 20, Andra discloses the structurally rigid material is metal and the protrusions are integrally formed with the insert.

As to claim 23, Andra discloses the insert has a first longitudinal axis (X) and the plurality of protrusions are splines, (crests of flange 1 at 8) each of the splines having a second longitudinal axis aligned generally parallel to the first longitudinal axis.

Claims 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Andra, U.S. 5,024,120 in view of Wells, U.S. 3,200,665 as applied to claims 19, 20 and 23 and in view of Fukahori et al., U.S. 4,899,323.

As to claims 21 and 22, Andra discloses the protrusions are continuous wave formations. Andra does not disclose the protrusions are cylindrical bosses nor rectangular tabs. Fukahori et al. teaches in figures 8-9 use of protrusions (3) that are cylindrical bosses or rectangular tabs to increase bonding between the hard plates and the rubber covering (col. 15, lines 28-35). It

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would have been obvious to one having ordinary skill in the art at the time of the invention to modify the protrusions disclosed by Andra to be cylindrical bosses or rectangular tabs as taught by Fukahori et al. to increase bonding between the hard plates and the rubber covering. Applicant should note that a change in the shape of a prior art device is a design consideration within the skill of the art. In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Andra, U.S. 5,024,120 in view of Fukahori et al., U.S. 4,899,323.

Regarding claim 24, Andra discloses an annular inertia ring (20). Andra discloses an elastomeric layer (3) disposed radially inward from the inertia ring. Andra discloses a polymer body (5) disposed radially inward from the elastomeric layer and having an inner peripheral surface. Andra discloses the polymer body being formed of a polyamide composite (col. 3, lines 57-59; plastic). Andra discloses an insert (1) disposed radially inward from the polymer body, the insert being formed of a first relatively rigid material and having an outer peripheral surface being generally coextensive with the inner peripheral surface of the polymer body. Andra does not disclose the polyamide composite having a reinforcing filler of a relatively rigid material. Fukahori et al. teaches use of a polyamide composite having a reinforcing filler of a relatively rigid material (col. 4, lines 60-68) to increase the strength of the material. It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the polyamide composite disclosed by Andra to have a reinforcing filler of a relatively rigid material; as taught by Fukahori et al. to increase the strength of the material.

Claims 25-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Andra, U.S. 5,024,120 in view of Fukahori et al., U.S. 4,899,323 as applied to claim 24 and in further view of Patterson, U.S. 5,112,282.

As to claim 25, Andra in view of Fukahori et al. discloses a reinforcing filler that is relatively rigid material. Andra in view of Fukahori et al. does not disclose the reinforcing filler is glass. Patterson teaches use of a reinforcing glass filler (col. 4, lines 52-65) as a matter of convention. It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the filler disclosed by Andra in view of Fukahori et al. to be glass; as taught by Patterson to adhere to conventional practice.

As to claim 26, Patterson teaches use of a polyamide composite including a plurality of glass fibers (col. 4, line 63 – col. 5, line 2).

As to claim 27, Patterson teaches use of a polyamide composite based on a nylon-copolymer (col. 4, lines 63-65).

As to claim 28, Andra discloses the polymer. Andra does not disclose the polymer is mechanically stable at a temperature of at least about 230 degrees F. Patterson teaches use of a polymer that is mechanically stable at a temperature of at least about 230 degrees F to improve performance characteristics at high temperatures (col. 3, lines 41-45). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the polymer disclosed by Andra to be mechanically stable at a temperature of at least about 230 degrees F as taught by Patterson to improve performance characteristics at high temperatures. Applicant should note that it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

As to claim 29, Andra discloses the structurally rigid material is metal (col. 3, lines 60-62).

Allowable Subject Matter

Claims 10-18 are allowed.

Claim 2, 5 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

The prior art does not disclose or suggest all the claimed subject matter including the polymer body includes an annular wall having a first annular surface, a second annular surface opposite the first annular surface and a service port extending through the annular wall between the first and second surfaces, the service port being positioned radially outward from the support flange.

The prior art does not disclose the seating surface is at least partially encapsulated in the polymer material forming the polymer body.

The prior art does not disclose or suggest the insert including a plurality of support flanges projecting radially outward into the polymer body and adjacent ones of the plurality of support flanges having an angular spacing about a circumference of the insert.

Conclusion

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenn Thompson whose telephone number is 703 306-5760. The examiner can normally be reached on 7:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne H Browne can be reached on 703 308-1159. The fax phone numbers for the organization where this application or proceeding is assigned are 703 305-7687 for regular communications and 703 305-7687 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308-2168.

KT
March 17, 2003


Lynne H. Browne
Supervisory Patent Examiner
Group 3600